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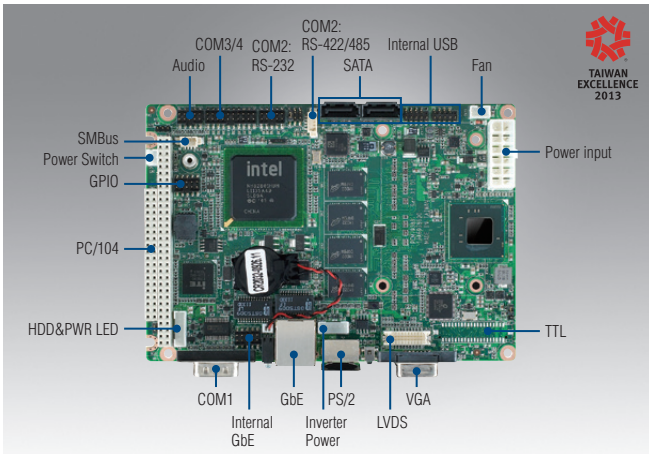
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PCM-9389

Intel® Atom™ N455/D525 3.5" SBC, DDR3 SODIMM/on-board SDRAM, 24-bit LVDS/TTL, VGA, 2 GbE, LPC, CF, PC/104, iManager



Features

- Intel® Atom™ N455 Single Core/ D525 Dual Core processor + ICH8M, DDR3 on-board memory or SO-DIMM support
- Intel Gen 3.5 DX9, MPEG2 Hardware Decoder, dual independent display: 18/24-bit LVDS, VGA
- Intel Dual GbE supported; Rich I/O interface with 4 COM , 2 SATA, 4 USB and GPIO connectors
- Integrates internal LPC connector to support four extra COM ports via PCA-COM232 or PCA-COM485
- Supports iManager, SUSIAccess and Embedded Software APIs

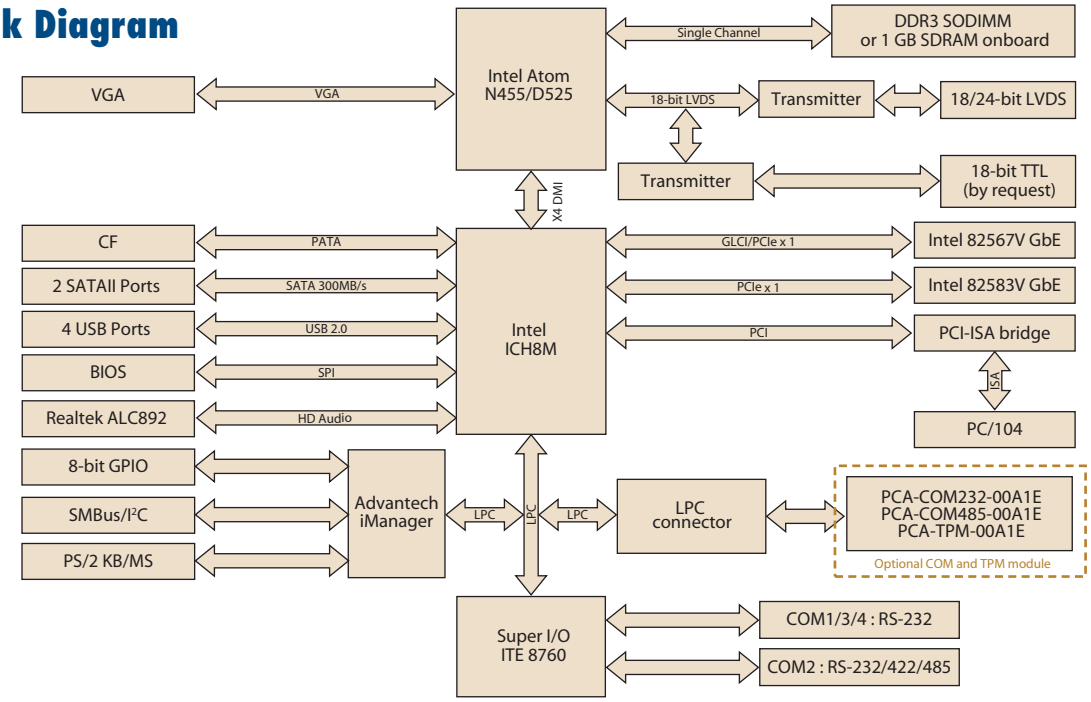
Software APIs: GPIO, H/W Monitor, Brightness, Watchdog, Backlight On/Off, SMBus, CPU Speed, System Throttling

Utilities: BIOS flash

Specifications

Processor System	CPU	Intel Atom N455 Single Core 1.66 GHz Processor Intel Atom D525 Dual Core 1.8 GHz Processor
	Frequency	1.66 GHz on N455, 1.8 GHz on D525
	L2 Cache	512 KB/1 MB
	System Chipset	Intel N455/D525 + ICH8M
	BIOS	AMI 16 Mbit Flash BIOS
Memory	Technology	DDR3 667 MHz for N455, 800 MHz for D525
	Max. Capacity	SODIMM sku: 2GB for N455, 4GB for D525
	Socket	1 x 204-pin SODIMM
	Onboard Memory	1GB (D525 on board memory supported by request)
Display	Chipset	Intel Atom Processor N455 1.66GHz/D525 1.8 GHz
	VRAM	Optimized Shared Memory Architecture up to 224 MB system memory
	Graphic Engine	Intel Gen 3.5 DX9, MPEG2 hardware decoder Embedded Gen3.5+ GFX Core
	LVDS	LVDS: Single channel 18/24-bit LVDS up to WXGA 1366 x 768
	VGA	Intel Atom N455 Single Core up to 1400 x 1050 (SXGA), Intel Atom D525 Dual Core up to 2048 x 1536
	TTL	18-bit TTL (by request)
	Dual Display	VGA+LVDS, VGA+TTL (TTL support by request)
Ethernet	Speed	10/100/1000 Mbps (Supports Wake on LAN)
	Controller	GbE1 Intel 82567V, GbE2 Intel 82583V
	Connector	GbE1 on RJ-45, GbE2 on internal box wafer
Audio	Chipset	Realtek ALC892 High Definition Audio (HD), Line-in, Line out, Mic-in
WatchDog Timer		255 levels timer interval, programmable by software. Multi-level WDT (set by iManager)
Storage	CompactFlash	CompactFlash type I/II (Primary Master IDE Channel)
	SATA	2 SATA II (Max. Data Transfer Rate 300 MB/s)
Rear I/O	Serial	1 (COM1 supports RS-232) (ESD protection for COM1: Air gap ±15kV, Contact ±8kV)
	Ethernet	1 (10/100/1000 Mbps)
	PS/2 KB/Mouse	1
	VGA	1
	Reset Button	1
Internal I/O	USB	4 x USB 2.0
	Serial	3 x COM (ESD protection for all COM ports: Air gap ±15kV, Contact ±8kV) COM3/4 supports RS-232, COM2 supports RS-232/422/485 (Supports RS-485 auto flow control)
	SMBus	1
	I²C	1 (Shared with SMBus)
	Ethernet	1 (10/100/1000 Mbps)
	GPIO	8-bit GPIO (5V tolerance)
Expansion	PC/104 Expansion (8/16-bit ISA)	1 (No support ISA DMA) (Booted and powered from PC/104 supported by request)
	LPC connector	1 (For support of COM ports by PCA-COM232 or PCA-COM485)
Power	Power Type	AT/ATX
	Power Supply Voltage	5V+/-5% (12V option for LCD, PC/104)
	Power Consumption (Typical)	PCM-9389N: 1.63 A @ 5 V (8.15 W) PCM-9389D: 1.94 A @ 5 V (9.7 W)
	Power Consumption (Max, test in HCT)	PCM-9389N: 2.23 A @ 5 V (11.15 W) PCM-9389D: 2.9 A @ 5 V (14.5 W)
	Power Management	APM, ACPI
	Battery	Lithium 3 V/210 mAH
Environment	Operational	0 ~ 60° C (32 ~ 140° F) (Operational humidity: 40° C @ 95% RH Non-Condensing)
	Non-Operational	-40° C ~ 85° C and 60° C @ 95% RH Non-Condensing
Physical Characteristics	Dimensions (L x W)	146 x 102 mm (5.7" x 4")
	Weight	0.64 kg (1.41 lb), weight of total package
	Total Height	26.2 mm for PCM-9389N 29.2 mm for PCM-9389D

Block Diagram



Ordering Information

Part Number	CPU	L2 Cache	Memory	VGA	LVDS	TTL	USB 2.0	SATA II	GbE	Audio	RS-232	RS-232/422/485	CF	LPC conn.	Expansion	Thermal Solution	Operating Temp.
PCM-9389N-1GS6A1E	Atom N455	512 KB	1GB onboard	1	18/24-bit	by request	4	2	2	Yes	3	1	1	Yes	PC/104	Passive	0 ~ 60° C
PCM-9389N-S6A1E	Atom N455	512 KB	SODIMM	1	18/24-bit	by request	4	2	2	Yes	3	1	1	Yes	PC/104	Passive	0 ~ 60° C
PCM-9389D-S8A1E	Atom D525	1 MB	SODIMM	1	18/24-bit	by request	4	2	2	Yes	3	1	1	Yes	PC/104	Active	0 ~ 60° C
PCM-9389NZ-1G0BA1E	Atom N455	512 KB	1GB onboard	1	18/24-bit	by request	4	2	2	Yes	3	1	1	Yes	PC/104	Passive	-20 ~ 80° C
PCM-9389NZ-2GDMA1E	Atom N455	512 KB	2GB bundled	1	18/24-bit	by request	4	2	2	Yes	3	1	1	Yes	PC/104	Passive	-20 ~ 80° C
PCM-9389NZ21G0BA1E	Atom N455	512 KB	1GB onboard	1	18/24-bit	by request	4	2	2	Yes	3	1	1	Yes	PC/104	Passive	-40 ~ 85° C
PCM-9389NZ22GDMA1E	Atom N455	512 KB	2GB bundled	1	18/24-bit	by request	4	2	2	Yes	3	1	1	Yes	PC/104	Passive	-40 ~ 85° C

Note: Passive = fanless; Active = with fan

Packing List

Part No.	Description	Quantity
	PCM-9389 SBC	
	Startup Manual	
	Utility CD	
9689000002	mini Jumper pack	
1700060202	KB/MS cable 20cm	1
1700018730	USB cable (2 ports) w/o bracket 25cm	2
1700019584	Audio cable (Mic-in, Line-in, Line-out) 20cm	1
1700016141	AT Power Cable	1
1700017863	RJ-45 LAN cable , 15cm	1
1700006291	SATA 7P cable w/ right angle, 30cm	1
1701200220	COM3/4 10*2P-2.0/D-SUB*2, 22cm	1
1700019435	COM2: RS-422/485 5P-1.25/D-SUB, 25cm	1
1700019414	COM2: RS-232 5*2P-2.0/D-SUB, 30cm	1
1960047988T011	Heatsink for ICH8M, 28x28.4x8mm	1
1960055364T001	Heatsink for PCM-9389N, 73.5x87.5x15mm	1
1960055365T001	Cooler for PCM-9389D, 73.5x87.5x18mm	1
1960057842T001	Heatsink for PCM-9389NZ/NZ2, 73.5x87.5x20mm	1

Rear I/O View



Optional Accessories

Part No.	Description
1960056151N001	Heat spreader (113 x 69.5 x 15 mm)
PCA-COM232-00A1E	4 RS-232 ports extension module, 31.5 x 48 mm
PCA-COM485-00A1E	4 RS-422/485 ports extension module, 31.5 x 48 mm (supported by request with OEM BIOS)
PCA-TPM-00A1E	TPM module, 31.5 x 48 mm
1700001112	ATX Power Cable
1700018436	Inverter 5P to SATA power 15P cable 10cm

Embedded OS/API

Embedded OS/API	Part No.	Description
Win XPE	2070011341	XPE WES2009 PCM-9389 V4.0 24MUI
	2070010313	XPE WES2009 PCM-9389 V4.0 ENG
WinCE	2070011337	CE 6.0 R3 Pro PCM-9389 V6.0.0 ENG (4 COM)
WES7	2070009835	Image WES7E Intel Lunar V5.0 ENG
QNX		6.5
VxWorks		6.8
Linux		Ubuntu 10.04.1
Software API		iManager 2.0

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